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13-307 C

April 30, 2013

United States Court of Federal Claims  
Howard T. Markey National Courts Bldg  
717 Madison Place, N.W.  
Washington, DC 20439

Re: Department of Homeland Security -- Infringement

Chief Judge Emily C. Hewitt:

The three solicitations released by the Department of Homeland Security that infringes Golden's [US RE43,990] patent are:

1. The Department of Homeland Security CELL-ALL Ubiquitous Biological and Chemical Sensing Solicitation Number: BAA07-10 released October 2007 and is referred to throughout this document as "Sol. 1; 2007; BAA; Cell Phone Chem/Bio Sensors".
2. The Department Of Homeland Security SBIR / STTR Miniature and Reliable Chemical Sensors for Cell Phones Solicitation No: Reference-Number-DHSSBIRFY081 released December 2007 and is referred to throughout this document as "Sol. 2; 2007; SBIR; Cell Phone Chemical Sensors".

3. The Department Of Homeland Security SBIR Phase 12.1 Smart Phone App(s) for Radioisotope Identification Device (RIID) and Spectroscopic Personal Radiation Detector (SPRD) Reachback Solicitation No.HSHQDC-12-R-00052 released May 2012 and is referred to throughout this document as "Sol. 3; 2012; SBIR; Smart Phone Rad/Nuc Sensors".

The three solicitations of "Sol. 1; 2007; BAA; Cell Phone Chem/Bio Sensors", "Sol. 2; 2007; SBIR; Cell Phone Chemical Sensors", "Sol. 3; 2012; SBIR; Smart Phone Rad/Nuc Sensors" are combined for the purpose of illustrating the development of, the use or manufacture of, the making of, the offer for sale of, and the sale of, a product or parts of a product; a device or parts of a device that infringes Golden's [US RE43,990] patent independent claim 11 (emphasis on the communication device that is the monitoring equipment integrated and interconnected to the cell phone detection device), independent claim 81 (emphasis on the cell phone detection device that is integrated and interconnected to the communication device that is the monitoring equipment and the sensors used for detection), and, independent claim 74 (emphasis on the sensors used for detection that is integrated and interconnected to the cell phone detection device).

The Department Of Homeland Security and the twelve companies (e.g. Samsung, LG, Apple, Qualcomm, Seacoast Science, NASA, Rhevision, Synkera, Boston MicroSystems, QuantaSpec, Spectral Labs, Creative Electron) that received awards and contracts for research and development of a cell phone detection device and the companies that received cooperative agreements from the Department Of Homeland Security in response to the three solicitations of Sol. 1; 2007; BAA; Cell Phone Chem/Bio Sensors", "Sol. 2; 2007; SBIR; Cell Phone Chemical Sensors", "Sol. 3; 2012; SBIR; Smart Phone Rad/Nuc Sensors" are combined for the purpose of illustrating the development of, the use or manufacture of, the making of, the offer for sale of, and the sale of, a product or parts of a product; a device or parts of a device that infringes Golden's [US RE43,990] patent independent claim 11 (emphasis on the communication device that is the monitoring equipment integrated and interconnected to the cell phone detection device), independent claim 81 (emphasis on the cell phone detection device that is integrated and interconnected to the communication device that is the monitoring equipment and the sensors used for detection), and, independent claim 74 (emphasis on the sensors used for detection that is integrated and interconnected to the cell phone detection device).

The Department Of Homeland Security and the twelve companies (e.g. Samsung, LG, Apple, Qualcomm, Seacoast Science, NASA, Rhevision, Synkera, Boston MicroSystems, QuantaSpec, Spectral Labs, Creative Electron) that received awards and contracts for research and development of a cell phone detection device and the companies that received cooperative agreements from the Department Of Homeland Security in response to the three solicitations of Sol. 1; 2007; BAA; Cell Phone Chem/Bio Sensors”, “Sol. 2; 2007; SBIR; Cell Phone Chemical Sensors”, “Sol. 3; 2012; SBIR; Smart Phone Rad/Nuc Sensors” are combined for the purpose of illustrating, showing and proving **direct infringement** (occurs when a person without authorization makes, uses, offers to sell or sells any patented invention within the United States or imports into the United States any patented invention during the term of the patent), **infringement by equivalents** (a claim may be infringed under the doctrine of equivalents if some other element of the accused device or process performs substantially the same function, in substantially the same way, to achieve substantially the same result), **contributory infringement** (is defined by 35 U.S.C. § 271(c): "Whoever offers to sell or sells within the United States or imports into the United States a component of a patented machine, manufacture, combination or composition, or a material or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer."), **inducement infringement** (covers situations where one actively induces the infringement of a patent by encouraging, aiding, or otherwise causing another person or entity to infringe a patent. A potential inducer must actually be aware of the patent and intend for their actions to result in a third party infringing that patent).

The color coded claims analysis included in this in a document of Golden’s [US RE43,990] patent independent claims 11, 81, and 74 are illustrated in a green print color and breaks down each element included in each of the independent claims 11, 81, and 74, (the purple print color represents the dependent claims of independent claim 81).

The color coded claims analysis included in this document has a break-down of each element requested by the Department of Homeland Security in the three solicitations of “Sol. 1; 2007; BAA; Cell Phone Chem/Bio Sensors”, “Sol. 2; 2007; SBIR; Cell Phone Chemical Sensors”, “Sol. 3; 2012; SBIR; Smart Phone Rad/Nuc Sensors”, illustrated in the rust print color.

The color coded analysis included in this document has also a universal interpretation, explanation, usage or definition of terms of:

- the communication device (system) that is the monitoring equipment of Golden's [US RE43,990] patent independent claim 11 and the DHS request for a communication device (system)
- the cell phone detection device (system) of Golden's [US RE43,990] patent independent claim 81 and the DHS request for a cell phone detection device (system)
- the sensor device (system) of Golden's [US RE43,990] patent independent claim 74 and the DHS request for a sensor device (system), and

is in blue print color and the interpretation, explanation, usage or definition of terms are parallel the like elements of both Golden's [US RE43,990] patent and the DHS solicitations for a cell phone detection device.

Enclosed in this document is a section of articles, product data sheets, agreements, award data sheets and documents with pictures and photographs that validate the "use or manufacture, make, develop, sell or offer for sell a patented product without the consent of the patent owner".

*On March 14, 2012, in an en banc decision, the Court of Appeals for the Federal Circuit reversed both itself and the Court of Federal Claims ("COFC") in holding that the government is subject to liability when a product using a patented process is used in, or imported into the United States by or for the United States government, even when part of the patented process occurred overseas. Zoltek Corp. v. United States, No. 2009-5135. The Federal Circuit reinstated the patent holder's 28 U.S.C. § 1498(a) claim against the United States and barred the plaintiff's pursuit of a further patent infringement claim against the contractor in district court. The Zoltek decision is good news for government contractors because it precludes separate contractor liability for patent infringement arising out of work performed on behalf of the United States. The decision also confirms that all such infringement claims must be brought for "reasonable and entire compensation" in the COFC against the United States.*

The Department of Homeland Security and the Department of Homeland Security awarded companies are infringing Golden's [US RE43,990] patent. The infringement is defined under **direct infringement** (occurs when a person without authorization makes, uses, offers to sell or sells any patented invention within the United States or imports into the United States any patented invention during the term of the patent), **infringement by equivalents** (a claim may be infringed under the doctrine of equivalents if some other element of the accused device or process performs substantially the same function, in substantially the same way, to achieve substantially the same result) and **contributory infringement** (is defined by 35 U.S.C. § 271(c): "Whoever offers to sell or sells within the United States or imports into

the United States a component of a patented machine, manufacture, combination or composition, or a material or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer." ). The supportive documents are:

Article; Awards; and Cooperative Research and Development Agreements (CRADA): "Sol. 1; 2007; BAA; Cell Phone Chem/Bio Sensors" cooperative agreement companies are Qualcomm, LG, Apple, and Samsung. The awarded companies are Qualcomm, Seacoast Science, Rhevision Technology and the Center for Nanotechnology at NASA Ames Research Center. Article: "Homeland Security Backs Cell Phone Sensors to 'Crowdsource' Detection of Deadly Chemicals".

Award Information Sheets: "Sol. 2; 2007; SBIR; Cell Phone Chemical Sensors" awarded companies are Synkera Technologies, Inc., Boston Microsystems, Inc., and QuantaSpec Inc.

Article; Award Information Sheets; and Product Photo Data Sheets: "Sol. 3; 2012; SBIR; Smart Phone Rad/Nuc Sensors" awarded companies are Spectral Labs Incorporated and Creative Electron. Article: "Apple's nex-gen iPhone power amp; NASA chemical sensor app".

Article of Product Demonstration: Demonstration companies are NASA's Center for Nanotechnology at Ames, Qualcomm Inc., and Synkera Technologies Inc. Article: "NASA science unveils new chemical detection technology", October 3, 2011 by Cathy Weselby and John Verrico.

Article of Product Development: Development companies are NASA's Ames Research Center. Article: "NASA brings chemical sensor to iPhone", November 10, 2009 by Michael Cooney, Network World.

Product Development White Paper of An Integrated Sensing System: Title; "Nanosensor – Cellphone Integration for Extended Chemical Sensing Network", by Jing Li, Ph.D. and Principal Investigator for the NASA Ames Research Center. The product was developed in partnership with the U.S. Department of Homeland Security Science & Technology Directorate.

Data Sheet for a Chemical (Temperature) Sensor: "Sol. 2; 2007; SBIR; Cell Phone Chemical Sensors" awarded company Synkera Technologies Inc. data sheet includes a photo picture of the Synkera Ultrakera carbon monoxide (CO) chemical (temperature) sensor.

Data Sheet; Picture of Product; and Product sale price (\$199.00) without the iPhone: "Sol. 3; 2012; SBIR; Smart Phone Rad/Nuc Sensors" awarded company Creative Electron and the cooperative agreement company Apple Inc. is offering for sale a Radiation/Nuclear Smart Phone Detection Device. The data sheet is titled; "iRad Geiger for Apple iOS Devices".

Data Sheet; Picture of Product; and Product sale price (\$299.00) without the iPhone: "Sol. 3; 2012; SBIR; Smart Phone Rad/Nuc Sensors" awarded company Creative Electron and the cooperative agreement company Apple Inc. is offering for sale a Radiation/Nuclear Smart Phone Detection Device. The data sheet is titled; "iRad Alpha for Apple iOS Devices".

Enclosed in this document is a section of appendixes of documents that discloses Golden's patent or patent pending "Multi Sensor Detection and Cell Phone Detection" technology and the documents were submitted to the Department of Homeland Security of Golden's developmental capabilities:

*On 31 August, 2012, the United States Court of Appeals for the Federal Circuit released its highly anticipated en banc decision in the case of Akamai Technologies, Inc. v. Limelight Networks, Inc., 692 F.3d 1301 (Fed. Cir. 2012). At issue was whether inducement to infringe a method patent claim under 35 U.S.C. § 271(b) required a single entity to perform all of the steps or whether liability could still be found where multiple actors performed the steps collectively.*

*The Federal Circuit overturned previous case law which required a plaintiff alleging induced infringement to show that the defendant induced a single entity to perform all of the steps of the claimed method. Under Akamai, inducement now includes those who induce multiple parties to infringe different steps of the claimed method so that the infringing conduct is split among more than one entity.*

*Under the new rule, inducement liability exists where the accused infringer (1) knew of the patent; (2) induced performance of the steps of the method; and (3) those steps were actually performed. It follows also that the accused infringer will also be liable if it performs some of the steps of the method and then actively induces performance of the other steps.*

*This decision is important because it closes a major loophole that has allowed some entities to knowingly and intentionally take advantage of a patented invention while avoiding the need to take a license.*

The Department of Homeland Security and the Department of Homeland Security awarded companies are infringing Golden's [US RE43,990] patent. The infringement is defined under **contributory infringement** (is defined by 35 U.S.C. § 271(c): "Whoever offers to sell or sells within the United States or imports into the United States a component of a patented machine, manufacture, combination or composition, or a material or an apparatus for use in practicing a patented process, constituting a material part of the invention, knowing the same to be especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use, shall be liable as a contributory infringer."), **inducement infringement** (covers situations where one actively induces the infringement of a patent by encouraging, aiding, or otherwise causing another person or entity to infringe a patent. A potential inducer must actually be aware of the patent and intend for their actions to result in a third party infringing that patent). The Appendixes are:

Appendix I: On **09/21/2006**, an e-mail correspondence and a proposal were submitted to the Department of Homeland Security/HSARPA to the attention of the Program Manager, Lisa Sobolewski.

Appendix II: On **09/25/2007**, a "White Paper" was submitted to the DHS S&T Directorate, to the attention of Margo Graves, Team Lead / Contracting Officer; Team Lead / Contracting Officer; Borders and Maritime Division in response to the RFI solicitation; SAFECON.

Appendix III: On **11/28/2007**, a "White Paper" was submitted to the Department of Homeland Security, to the attention of Margo L. "Margo" Graves, Team Lead / Contracting Officer Margaret L. Office of Procurement Operations / Science & Technology Acquisitions Division in response to Broad Agency Announcement CELL-ALL Ubiquitous Biological and Chemical Sensing Solicitation Number: (BAA07-10)

Appendix IV: On **01/18/2008**, a "Read Ahead" document was submitted to the DHS S&T Directorate, and to the attention of Edward Turner; Program Manager. Reference was made to the "General description & Solutions alignment for "Cargo Containers, Cell Phones & Vehicles":

Appendix V: On **05/22/2008**, a "White Paper" that included the capability for the development of a Cell phone detection device was submitted to the DHS; S&T Directorate, to the attention of David Newton,

Acting Division Head, Borders and Maritime, S&T-BordersMaritime@dhs.gov; in response to solicitation "Long Range Broad Agency Announcement (BAA08-01)".

Appendix VI: On **01/06/2009**, a "White Paper" was submitted to the DHS; S&T Directorate, to the attention of Emily Graham, Contract Specialist; Office of the Chief Procurement Officer in response to the TRUST solicitation RFI.

Appendix VII: On **09/03/2009**, an e-mail correspondence and a proposal were submitted to the attention of Stephen Dennis, Program Manager for the "Cell-All Project", Department of Homeland Security (DHS); Science and Technology (S&T) Directorate.

Appendix VIII: On **11/07/2009**, a "Full Proposal" was submitted to the DHS; S&T Directorate, to the attention of the Director of Innovation, in response to the Broad Agency Announcement (BAA) 09-17, "Time Recorded Ubiquitous Sensor Technologies" (TRUST).

Appendix IX: On **09/01/2010**, a "White Paper" was submitted to the DHS; S&T Directorate, to the attention of SandT-BordersMaritime@dhs.gov; in response to solicitation "Long Range Broad Agency Announcement (BAA10-01)"; title of proposal: "Integrated Systems for Border and Maritime Security".

" Section 1498(a) further provides that whenever a patented invention "is used or manufactured by or for the United States without license of the owner thereof . . . the owner's remedy shall be by action against the United States in the [CFC] for the recovery of his reasonable and entire compensation for such use or manufacture."

*An applicant, his successors, assigns, or legal representatives, whose patent is withheld as herein provided, shall have the right, beginning at the date the applicant is notified that, except for such order, his application is otherwise in condition for allowance, or February 1, 1952, whichever is later, and ending six years after a patent is issued thereon, to apply to the head of any department or agency who caused the order to be issued for compensation for the damage caused by the order of secrecy and/or for the use of the invention by the Government, resulting from his disclosure. The right to compensation for use shall begin on the date of the first use of the invention by the Government. The head of the department or agency is authorized, upon the presentation of a claim, to enter into an agreement with the applicant, his successors, assigns, or legal representatives, in full settlement for the damage and/or use. This settlement agreement shall be conclusive for all purposes notwithstanding any other provision of law to the contrary.*

*If full settlement of the claim cannot be effected, the head of the department or agency may award and pay to such applicant, his successors, assigns, or legal representatives, a sum not exceeding 75 per centum of the sum which the head of the department or agency considers just compensation for the damage and/or use.*

Below is a quote taken from the "CELL-ALL Ubiquitous Biological and Chemical Sensing Solicitation Number: (BAA07-10)". The information contained will be used as a guide in determining the reasonable and entire compensation:

"If **biological and chemical sensors** could be effectively integrated into common cell phone devices and made available to the American public on a voluntary basis, the Nation could potentially benefit from a sensor network with **more than 240M sensors....** Through this BAA, HSARPA is seeking to accelerate advances in miniaturized biological and chemical sensing (e.g. laboratories on a chip) with integration into common device(s) and a **communication systems concept for large scale multi-sensor networks....** This proof of concept should be capable of detecting hazardous biological and/or chemical materials **with eventual expansion to the detection of explosive and eventually radiological materials....**"

Sol. 1; 2007; BAA; Cell Phone Chem/Bio Sensors

120 million chemical sensors

120 million biological sensors

Sol. 2; 2007; SBIR; Cell Phone Chemical Sensors

120 million chemical sensors

Sol. 3; 2012; SBIR; Smart Phone Rad/Nuc Sensors

120 million radiation sensors

120 million nuclear sensors

Total number of sensors for Sol. 1, Sol. 2, and Sol. 3

600 million sensors

*Note:* 600 million sensors will be used for calculating reasonable compensation for Independent claims 11, 81, and 74.

Golden's [US RE43,990] patent claim 11: 600 million sensors to come on line for monitoring, servicing, and data transfer. The communication system is handled by the service providers (e.g., Apple, Qualcomm, LG, and Samsung). 600 million sensors @ \$1 dollar monthly service fee = \$600 million dollars per/mth. \$600 million dollars per/mth @ 12 months per/yr = \$7.2 billion dollars per/yr. \$7.2 billion dollars per/yr. for 10 of the remaining years of the patent = **\$72 billion dollars over 10 years.**

Golden's [US RE43,990] patent claim 81: 600 million cell/smart phones that includes the software application (the support for the software application is in the 2<sup>nd</sup> item of claim 74 but is not being used here as a separate calculation for compensation) for integrating the detection capability. The average high-end smart phone is \$250 dollars. \$250 dollars @ 2% = \$5 dollars. 600 million cell/smart phones that includes the software application @ \$5 dollars each = **\$3 billion dollars.**

Golden's [US RE43,990] patent claim 74: 600 million sensors/detectors. Creative Electron is selling two smart phone sensor/detector devices for radiation and nuclear detection that's priced @ \$299 dollars and \$199 dollars (the smart phone is not included in the price). The average price is \$250 rounded. \$250 dollars @ 10% royalty = \$25 dollars. (the 10% royalty is used because Golden's ATPG TECHNOLOGY, LLC had an opportunity to be the lead company in developing the sensor/detector for sell). 600 million sensors/detectors @ \$25 dollars each in royalties = **\$15 billion dollars in royalties.**

\$72 billion dollars plus \$3 billion dollars plus \$15 billion dollars = **\$90 billion dollars total**

Apple announces Q1 2013 earnings: record \$54.5 billion in revenue, 47.8 million iPhones and 22.9 million iPads sold (**estimated \$200 billion for 2013**).

Qualcomm Inc., the wireless technology giant said 2013 first quarter revenue increased 24 percent to \$6.12 billion (**estimated \$24 billion for 2013**).

LG Electronics 2013 revenues in the first quarter rose 6.8 percent year-over-year 13.01 billion mainly due to the improved performance of the mobile business (**estimated \$52 billion for 2013**).

Samsung Electronics, the world's No.1 smart phone vendor. Samsung's hot streak continues in 2013 Q1: Record \$7.7B profit on \$45.9B in sales (**estimated \$180 billion for 2013**).

## CONCLUSION

Below is an article that supports Golden's [US RE43,990] patent independent claim 11 of; "A communication device of at least one of a cell phone.... or a computer terminal at a monitoring site for monitoring products, interconnected to a product for communication therebetween". The cell phone, and the monitoring site, and the product for communication therebetween, all work as a functional unit. The cell phone detection system must include all of the above components. The "product for communication therebetween" (e.g. cell tower, cell site or base station) is defined in the items of claim 11. If the Department of Homeland Security wants to argue the merits of claim 11, they should be mindful of the fact that the cell tower, cell site or base station can be considered a "tag-along" to recover damages for the loss profits.

*"The patentee may also seek to recover damages for the lost profits he would have made on accessory items that typically are purchased with the patented item. For these tag-along or convoyed sales, the Rite-Hite court held that those damages may also be recoverable. For such recovery, however, all of the components (patented item and the tag-along items) must work as a functional unit. If the tag-along items and the patented item can function as stand-alone products, then this type of damages may not be recoverable" Wikibooks.org*

### How do Cell Phone Towers Work?

Cell phone towers are also known as **cell site or base stations**, and are made up of radios, computerized switching equipment, and antennas for receiving and transmitting radio frequency (RF) signals. They are usually mounted atop or on the side of tall buildings, water tanks, etc.

A signal cell phone tower will host single or multiple mobile operators, serving different air interface technology, such as CDMA or GSM. Part of the electromagnetic spectrum, cell phones and cell phone towers operate at the radio frequency, and emit non-ionizing radiation, similar to the one's used by microwave, AM and FM radio waves, and are too low on energy, to enter DNA tissues.

The operating mechanics of a cell phone are quite simple. When a call is made through a cellular phone, a signal is sent out from the cell phone's antenna to the base station antenna. It radios the nearest cell phone tower, which is particular to your service provider or a collaborator of your service provider.